



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
06.02.2002 Bulletin 2002/06

(51) Int Cl.7: **B29C 53/48**, B29C 65/62,
 F16L 55/165, B29C 63/36
 // B29L9:00, B29L23:00

(43) Date of publication A2:
03.05.2000 Bulletin 2000/18

(21) Application number: **99308473.0**

(22) Date of filing: **26.10.1999**

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
 MC NL PT SE**
 Designated Extension States:
AL LT LV MK RO SI

• **Oar Company**
Tokorozawa-shi, Saitama-ken (JP)

(30) Priority: **26.10.1998 JP 30372898**

(72) Inventors:
 • **Kamiyama, Takao**
Hiratsuka-shi, Kanagawa-ken (JP)
 • **Yokoshima, Yasuhiro**
Yuki-gun, Ibaraki-ken (JP)
 • **Endoh, Shigeru**
Niihari-gun, Ibaraki-ken (JP)
 • **Aoki, Hiroyuki**
Tokorozawa-shi, Saitama-ken (JP)

(71) Applicants:
 • **SHONAN GOSEI - JUSHI SEISAKUSHO K.K.**
Hiratsuka-shi, Kanagawa-ken (JP)
 • **YOKOSHIMA & COMPANY**
Yuki-gun, Ibaraki-ken (JP)
 • **Get Inc.**
Tsukuba-shi, Ibaraki-ken (JP)

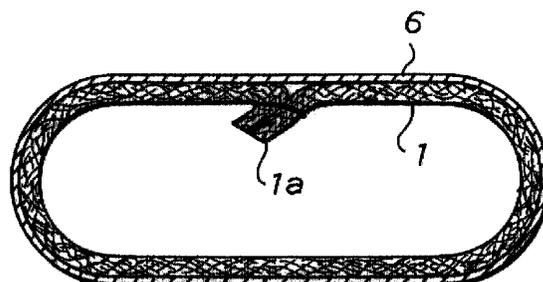
(74) Representative: **Whalley, Kevin**
MARKS & CLERK, 57-60 Lincoln's Inn Fields
London WC2A 3LS (GB)

(54) **Method of manufacturing a pipe liner bag**

(57) A method of manufacturing a pipe liner bag which is composed of a tubular resin absorbent material having an outer surface covered with a highly air-tight plastic film and a hardenable resin impregnated in the tubular resin absorbent material. In one embodiment, the method involves folding a strip-shaped resin absorbent material (1) and aligning both ends thereof in the width direction, straight sewing overlapped portions to form a tubular resin absorbent material while leaving a

sewing margin (1a), turning the tubular resin absorbent material inside out such that a previous inner surface thereof appears outside, and welding or adhering a plastic film (6) entirely or partially on the outer surface of the tubular resin absorbent material to air-tight seal the outer surface. The method can reduce the time required for a joining operation and simplifying a sealing operation after both ends of the strip-shaped resin absorbent material have been joined.

Fig. 9





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 99 30 8473

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Y	ZA 8 909 333 A (CARLOS DOS SANTOS MORAIS; JOAO CARLOS RIBEIRO MORAIS) 29 August 1990 (1990-08-29) * claims; figures *	1-3	B29C53/48 B29C65/62 F16L55/165 B29C63/36 //B29L9:00, B29L23:00
Y	US 5 242 517 A (ENDOH SHIGERU) 7 September 1993 (1993-09-07) * figures 1-3 *	1-3	
Y	DE 196 46 080 A (VER FILZFABRIKEN AG) 14 May 1998 (1998-05-14) * column 2, line 38 - line 39; claim 5; figure 4 *	4,6-8	
Y	WO 93 11939 A (W E RAWSON LIMITED) 24 June 1993 (1993-06-24) * page 12, line 6 - line 12; figures *	5-8	
Y	US 5 382 223 A (SPRINGS MICHAEL A) 17 January 1995 (1995-01-17) * column 4, line 14 - line 19; figures 6,7 *	4-8	
A	EP 0 726 136 A (SHONAN GOSEI JUSHI SEISAKUSHO ;YOKOSHIMA & COMPANY (JP)) 14 August 1996 (1996-08-14) * figures *	6-8	
A	DE 36 14 963 A (ROEDERS AG GEB) 1 October 1987 (1987-10-01) * claims 1-3; figures *	4,5	
A	EP 0 009 402 A (INSITUFORM INT INC) 2 April 1980 (1980-04-02) * claim 1 *	1-3	
D	& JP 58 033098 B 18 July 1983 (1983-07-18) --- -/--		
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 18 December 2001	Examiner Cordenier, J
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

EPO FORM 1503 03/92 (P04C01)



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 99 30 8473

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	US 3 785 893 A (ROTONDI P) 15 January 1974 (1974-01-15) * figures 2,5 *	1	
A	US 4 478 661 A (LEWIS CHARLES M) 23 October 1984 (1984-10-23) * figure 10 *	1	
A	EP 0 252 023 A (FISI FIBRE SINT SPA) 7 January 1988 (1988-01-07) * abstract; figures 1,2 *	1,2	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
Place of search	Date of completion of the search	Examiner	
THE HAGUE	18 December 2001	Cordenier, J	
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

EPO FORM 1503 03/82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 99 30 8473

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

18-12-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
ZA 8909333 A	29-08-1990	NONE	
US 5242517 A	07-09-1993	JP 2041039 C JP 4059227 A JP 7045182 B	09-04-1996 26-02-1992 17-05-1995
DE 19646080 A	14-05-1998	DE 19646080 A1	14-05-1998
WO 9311939 A	24-06-1993	GB 2262322 A ,B US 5672398 A AU 3163793 A EP 0616571 A1 WO 9311939 A1	16-06-1993 30-09-1997 19-07-1993 28-09-1994 24-06-1993
US 5382223 A	17-01-1995	NONE	
EP 0726136 A	14-08-1996	JP 2702086 B2 JP 8216255 A DE 69518733 D1 DE 69518733 T2 DK 726136 T3 EP 0726136 A1 US 5698056 A	21-01-1998 27-08-1996 12-10-2000 31-05-2001 09-10-2000 14-08-1996 16-12-1997
DE 3614963 A	01-10-1987	DE 3614963 A1	01-10-1987
EP 0009402 A	02-04-1980	AU 531781 B2 AU 5113179 A DK 399479 A ,B, EP 0009402 A1 WO 8000720 A1 GB 2031107 A ,B JP 56501355 T JP 58033098 B SG 77683 G US 4446181 A	08-09-1983 27-03-1980 23-03-1980 02-04-1980 17-04-1980 16-04-1980 24-09-1981 18-07-1983 27-03-1987 01-05-1984
US 3785893 A	15-01-1974	NONE	
US 4478661 A	23-10-1984	NONE	
EP 0252023 A	07-01-1988	IT 1191826 B EP 0252023 A1 JP 63012679 A US 4803109 A	23-03-1988 07-01-1988 20-01-1988 07-02-1989

EPC FORM P0469

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82